

06/2015

FINNISH CENTRE FOR PENSIONS, REVIEWS

# Pension indicators 2015



**Finnish Centre for Pensions**  
ELÄKETURVAKESKUS



06/2015

FINNISH CENTRE FOR PENSIONS, REVIEWS

## Pension indicators 2015



**Finnish Centre for Pensions**  
ELÄKETURVAKESKUS

**Finnish Centre for Pensions**

FI-00065 ELÄKETURVAKESKUS, FINLAND

Telephone +358 29 411 20

E-mail: [firstname.surname@etk.fi](mailto:firstname.surname@etk.fi)

**Eläketurvakeskus**

00065 ELÄKETURVAKESKUS

Puhelin: 029 411 20

Sähköposti: [etunimi.sukunimi@etk.fi](mailto:etunimi.sukunimi@etk.fi)

**Pensionsskyddscentralen**

00065 PENSIONSSKYDDSCENTRALEN

Telefon: 029 411 20

E-post: [fornamn.efternamn@etk.fi](mailto:fornamn.efternamn@etk.fi)

Helsinki 2015

ISSN-L 1236-7737

ISSN 1798-7474 (online)

## FOREWORD

Pension policy aims to secure sufficient earnings-related pensions, the sustainability of financing of the earnings-related pension scheme, and longer working lives. In a 2011 report<sup>1</sup> by the so-called ‘working life’ working group, central pension policy goals were presented as follows:

- It is necessary to secure a sufficient level of earnings-related pension benefits under conditions where future pensions are lowered by the life expectancy coefficient to a greater extent than expected.
- The sustainability of financing of the earnings-related pension scheme must be secured through a development of earnings-related pension contributions that does not weaken the preconditions for employment and economic growth.
- The average retirement age must rise sufficiently in order for the two aforementioned goals to be realised.

In line with these goals, negotiations on reforming earnings-related pension provision took place in 2014, and in autumn 2015, the government’s proposal on amending the legislation concerning the earnings-related pension scheme will be reviewed in Parliament. In 2013, the Finnish Centre for Pensions introduced, for the first time, key indicators to monitor the development of pension provision. *The Pension Indicators* provide a picture of the state of earnings-related pension provision as well as its development, both past and projected. The review is directed at decision-makers and others interested in the future outlook of pension provision. Further information on the subjects of the report is available on the website of the Finnish Centre for Pensions and in various publications.

The Pension indicators have been grouped according to three central goals: length of working life, pension level and pension financing. The core indicators include central issues in terms of the development of the earnings-related pension provision and the monitoring of the reforms. The supplementary indicators offer, as their name reveals, additional insight.

The indicators of this review have been compiled by Mikko Kautto, Jari Kannisto, Marja Kiviniemi, Juha Knuuti, Jukka Lampi, Heidi Nyman, Ismo Risku and Janne Salonen of the Finnish Centre for Pensions, as well as Reijo Vanne of The Finnish Pension Alliance TELA.

*Helsinki, October 2015*

*Mikko Kautto*

*Director, Finnish Centre for Pensions*

---

<sup>1</sup> Työurat pidemmiksi – työeläkejärjestelmän kehittämisvaihtoehtojen tarkastelua. Työurien pidentämistä selvittävän työryhmän raportti. Valtioneuvoston kanslian julkaisusarja 4/2011.



# CONTENTS

Foreword .....	3
<b>1 Length of the working life .....</b>	<b>7</b>
<b>1.1 Core indicators.....</b>	<b>7</b>
1.1.1 Expected effective retirement age.....	8
1.1.2 Duration of active working life and duration of employment.....	10
1.1.3 Employment rate.....	11
1.1.4 Working life length of new retirees.....	12
<b>1.2 Complementing indicators.....</b>	<b>13</b>
1.2.1 The expected effective retirement age, median and average value .....	14
1.2.2 Expected effective retirement age of 60- and 62-year-olds .....	15
1.2.3 Share of insured that have retired on an earnings-related pension .....	16
1.2.4 Age-standardized incidence of disability pensions .....	17
1.2.5 Duration of active working life in the Nordic countries and the EU .....	18
1.2.6 Employment rate of 55–67-year-olds.....	19
1.2.7 Employment rate of 20–29-year-olds.....	20
1.2.8 Employment rate of 55–64-year-olds in the Nordic countries and the EU .....	21
<b>2 Level of pensions .....</b>	<b>23</b>
<b>2.1 Core indicators.....</b>	<b>23</b>
2.1.1 Average total pension in one's own right.....	24
2.1.2 Average total pension in one's own right in relation to average earnings.....	25
2.1.3 Average total pension in relation to average earnings in 2014–2080 .....	26
2.1.4 Pension replacement rate .....	27
2.1.5 Calculation of the development of theoretical pension replacement rates .....	28
<b>2.2 Complementing indicators.....</b>	<b>29</b>
2.2.1 Average total pension in one's own right and share of pension income per decile.....	30
2.2.2 Pension replacement rate distribution.....	31
2.2.3 Income of pensioner households .....	32
2.2.4 The low income of pensioners.....	33
<b>3 Pension expenditure and financing.....</b>	<b>35</b>
<b>3.1 Core indicators.....</b>	<b>35</b>
3.1.1 Statutory pension expenditure in relation to the gross domestic product.....	36
3.1.2 Earnings-related pension expenditure in relation to the sum of earnings.....	37
3.1.3 Expenditure and contribution rates under the Employees Pensions Act.....	38
3.1.4 Accrued pension rights and the funding ratio .....	39
<b>3.2 Complementing indicators.....</b>	<b>41</b>
3.2.1 Earnings-related and national pension expenditure .....	42
3.2.2 Earnings-related pension contribution rates.....	43
3.2.3 Earnings-related pension funds in relation to the sum of earnings .....	44
3.2.4 Investment returns.....	45
3.2.5 Internal rate of return on earnings-related pension contributions by generation.....	46





## **1 Length of the working life**

### **1.1 Core indicators**

- 1.1.1 Expected effective retirement age
- 1.1.2 Duration of active working life and duration of employment
- 1.1.3 Employment rate
- 1.1.4 Working life length of new retirees

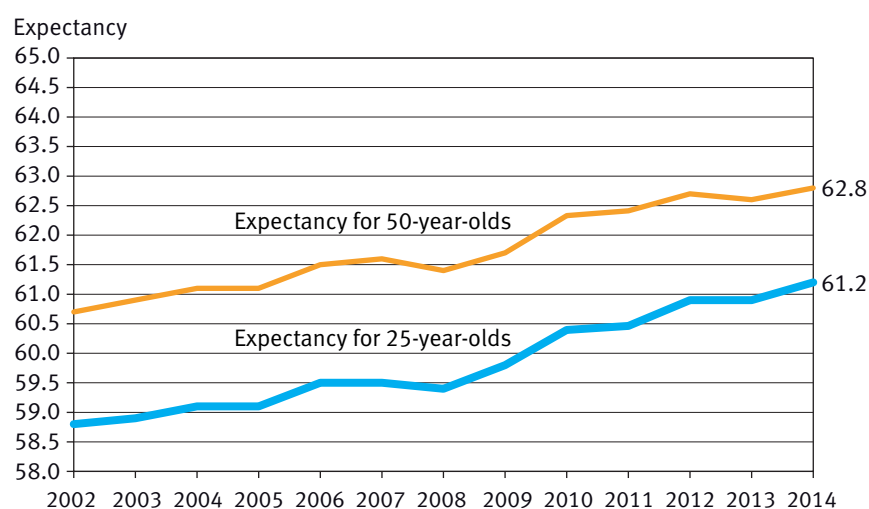
### 1.1.1 Expected effective retirement age

The *expected effective retirement age* depicts the average retirement age for insured persons of a certain age when presuming that the retirement risk and mortality per age group does not change. Part-time retirees are not included when calculating the expectancy.

The expected effective retirement age can be calculated for persons at any age. The expectancy for a 25-year-old has been selected as the basic indicator.

**Figure 1.1.1a.**

*Expected effective retirement age in 2002–2014, all retirees on earnings-related pension.*

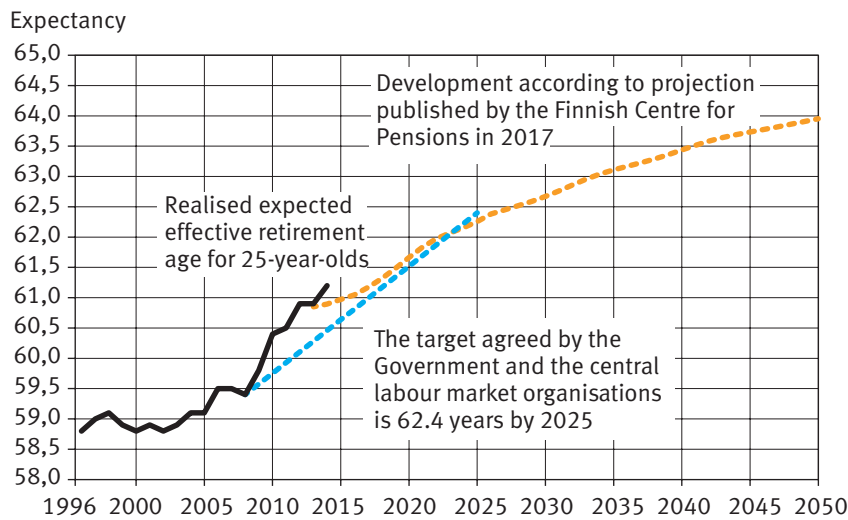


The expectancy for a 25-year-old has risen by 2.4 years over the last 12 years. In 2014, the expectancy for a 25-year-old was 61.2 years, which is 0.3 years higher than it was the previous year. If a person is still insured for earnings-related pension at the age of 50 (not retired), the expected effective retirement age in 2014 was 1.6 years higher, in other words 62.8 years. This 50-year-old expectancy rose 0.2 years from the previous year.

Additional information: Expected effective retirement age in the Finnish earnings-related pension scheme. Finnish Centre for Pensions, Statistical Reports 03/2015.

**Figure 1.1.1b.**

*Expected effective retirement age in 1996–2050: realization, goal and projection.*



In 2009, the government and central labour market organisations set as their goal that the expected effective retirement age of a 25-year-old should be raised to 62.4 years by 2025. This goal was confirmed in the government programme of Jyrki Katainen's government in 2011, in the working life agreement of the labour market organisations in 2012, in the government's 2013 structural policy programme and in the government programme of Prime Minister Alexander Stubb, whose term in office began in June 2014. Prime Minister Juha Sipilä's government programme 2015 states that the government will present a proposal on amending the legislation concerning the earnings-related pension scheme. The proposal aims at realising the target related to the effective retirement age.

The expectancy rose moderately between 1996 and 2004, and considerably since 2005. The rapid change, particularly since 2009, has partly been due to the termination of unemployment pension. Reaching the set goal requires that the expectancy continues to rise from the 2014 level by 1.3 years by 2025. According to a consequence analysis carried out by the Finnish Centre for Pensions on the 2017 pension reform, as a result of the reform, the expectancy for the effective retirement age would rise to the targeted level at around the year 2025 (*Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista. Eläketurvakeskuksen raportteja 02/2015*).

### 1.1.2 Duration of active working life and duration of employment

*The duration of active working life* depicts the average number of years a 15-year-old is expected to take part in the workforce during the remaining years of life, if the work force shares of the year in question would prove to be permanent.

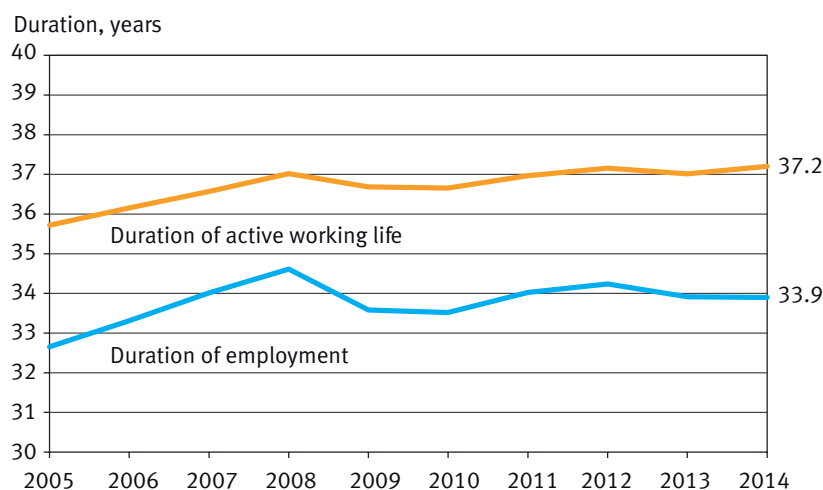
*The duration of employment* depicts the average years that a 15-year-old person can be expected to be in employment or self-employment during the remaining years of life, if the rates of employment during the year in question would prove to be permanent. Its annual values are cyclical in the same way as the employment rate.

The calculations are based on data from the workforce research of Statistics Finland. The variables used are workforce share and employment rate. More detailed definitions can be found at the website of Statistics Finland, [http://stat.fi/til/tyti/index\\_en.html](http://stat.fi/til/tyti/index_en.html).

The calculations have been carried out at the Finnish Centre for Pensions.

**Figure 1.1.2.**

*Duration of active working life and duration of employment for a 15-year-old in 2005–2014.*



The duration of employment has risen from 32.7 to 33.9 years over the period 2005–2014. The duration was reduced in 2009 but has since remained relatively stable.

The three-year difference between the duration of active working life and the duration of employment is due to unemployment.

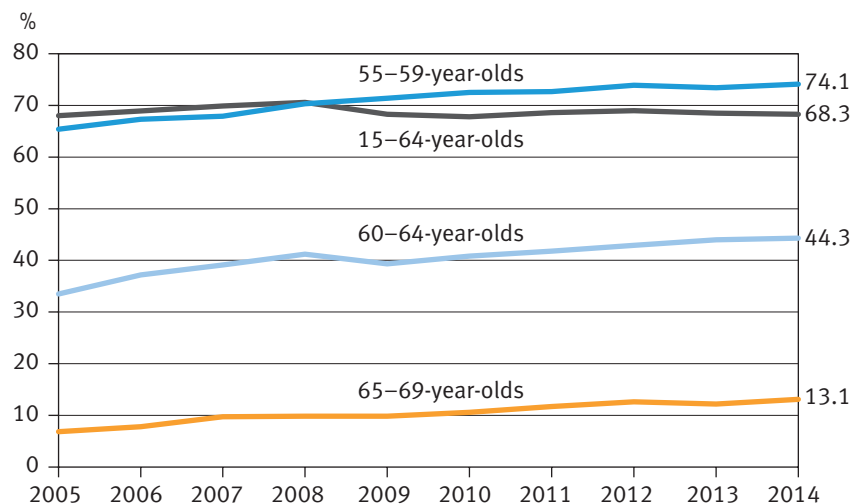
### 1.1.3 Employment rate

The *employment rate* is the percentage share of employed persons in the population of the same age. The review is based on the annual average values of the labour force survey by Statistics Finland. Normally, the employment rate is calculated as a percentage share of same-age population among the employed between 15 and 64 years of age. This being the case, 65–69-year-olds do not impact the employment rate of the population as a whole.

As employed is considered a person who, during the survey week, was in gainful employment and receiving monetary salary for at least an hour or fringe benefits for work, or profit if self-employed, or someone who has been temporarily off work. More detailed definitions are available from Statistics Finland: [http://stat.fi/til/tyti/index\\_en.html](http://stat.fi/til/tyti/index_en.html).

**Figure 1.1.3.**

*Employment rate by age group in 2005–2014.*



The employment rate rose in the 2000s, right up until the financial crisis of 2008. Development has been particularly favourable in the age cohorts of those who have turned 55.

The employment rate of 55–59-year-olds has risen in recent years to a higher level than the employment rate of the entire working-age population. In 2014, the employment rate of this age cohort was higher than ever in the 2000s. After the previous year's decline, the employment rate rose to 74.1 per cent.

The employment of 60–64-year-olds and 65–69-year-olds has also improved significantly. In these age groups, the employment rate has increased after the financial crisis to a record level in the 2000s. The employment rate for 60–64-year-olds rose to 44.3 per cent, and for 65–69-year-olds to 13.1 per cent in 2014.

Despite the favourable development of the employment of persons who have turned 55, the employment rate of the whole population has stagnated. The employment rate for the entire population of 15–64-year-olds has stagnated well below the 70 per cent level for some time now, and it is not likely to return to the 2008 level any time soon. In 2014, the employment rate decreased by 0.2 per cent.

### 1.1.4 Working life length of new retirees

By *length of working life* is here meant the duration of the time, in months or years, of coverage by the earnings-related pension scheme. In such cases, working life only includes employment insured for earnings-related pensions or self-employment. In this review, a person is considered to have been at work during a specific month, if he or she has been employed or self-employed and insured for earnings-related pensions during said month, according to register information.

The working life is considered to have begun at the earliest from the beginning of the month following the 18th birthday, as that is the time when pension accrual currently starts. Since the review ends with retirement, the working life does not comprise work carried out alongside receiving a pension, if the pension in question is not part-time pension. The information is based on the statistical registers of the Finnish Centre for Pensions.

**Table 1.1.4.**

*The length of working lives of retirees in 2014, years.*

	Average	Median
<b>All new retirees in 2014</b>		
Men	33.5	37.8
Women	32.1	36.2
Both sexes	32.8	37.0
<b>Those retiring on an old-age pension in 2014</b>		
Men	36.6	39.5
Women	35.0	38.2
Both sexes	35.8	38.9

In 2014, the length of working lives of new retirees prior to retirement was 32.8 years on average. Within a two-year period, the length of working life has grown by nearly a year, for men slightly less than for women. Since the distribution of working life length is strongly askew, the median depicts the length of working life better than the average value. According to the median, over half of all new retirees on an earnings-related pension in 2014 had worked for at least 37.0 years prior to retirement.

Since some of the new retirees have left working life behind due to disability, which shortens working lives, it is natural that we should review those retiring on an old-age pension and their working lives separately. The length of working lives of those retiring directly on old-age pension in 2014 was 35.8 years on average, and the median was 38.9. In other words, half of all new old-age retirees worked for close to 39 years before retiring.

Men have 1.5 years longer working life history than women. The difference is the same for everyone as for those retiring on an old-age pension. Childcare is likely the most important reason behind the difference between men and women seen here. However, the effective retirement age cannot explain this difference, as men and women retire at the same age on average. In 2014, the average retirement age was 60.5 years and the median 63.1 years.

## **1 Length of the working life**

### **1.2 Complementing indicators**

- 1.2.1 The expected effective retirement age, median and average value
- 1.2.2 Expected effective retirement age of 60- and 62-year-olds
- 1.2.3 Share of insured that have retired on an earnings-related pension
- 1.2.4 Age-standardized incidence of disability pensions
- 1.2.5 Duration of active working life in the Nordic countries and the EU
- 1.2.6 Employment rate of 55–67-year-olds
- 1.2.7 Employment rate of 20–29-year-olds
- 1.2.8 Employment rate of 55–64-year-olds in the Nordic countries and the EU

### 1.2.1 The expected effective retirement age, median and average value

The effective retirement age can be described by the indicators expectancy, median and average value.

The expected effective retirement age (*expectancy*) depicts the average retirement age for insured persons of a certain age when presuming that starting pensions and mortality per age cohort remain at the level of the year under review. The expected effective retirement age can be calculated for persons at any age. The expectancy for a 25-year-old has been selected as the basic indicator.

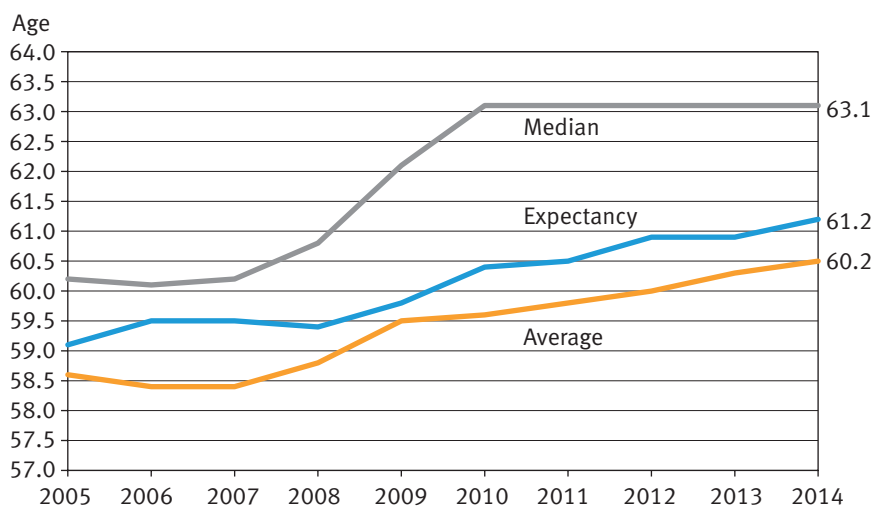
The *median* is the age that 50% of retirees are younger than and 50% are older than.

The *average* age is the arithmetic mean of the ages of those who retired.

Those starting to receive a part-time pension are not considered as having retired.

**Table 1.2.1.**

*The expected effective retirement age, median and average value in the earnings-related pension scheme in 2005–2014.*



The effective retirement age has risen in the 2000s, based on all indicators presented. The increase has been especially strong following the pension reform.

The average value and median depict the effective retirement age in a certain year. They should not be used to make interpretations of changes occurring over time. The age structure of the population has strongly affected the effective retirement age in the 2000s. The large age cohorts have reached old-age retirement age, and raise the effective retirement age simply by being so numerous. Once they have retired, the impact of these large age cohorts on the indicators will grow less, which again affects the average value and median by lowering them. Only changes in retirement behaviour can affect the expectancy.



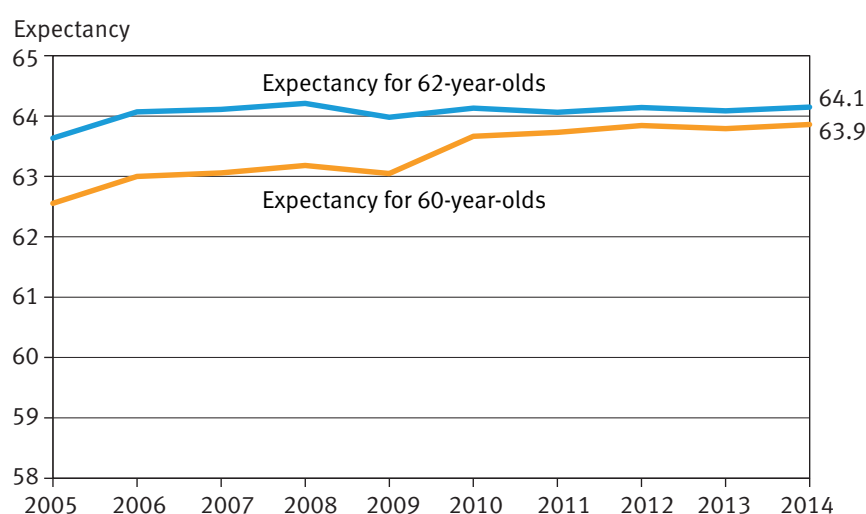
### 1.2.2 Expected effective retirement age of 60 and 62-year-olds

The *expected effective retirement age* depicts the average retirement age for insured persons of a certain age when presuming that starting pensions and mortality per age cohort remain at the level of the year under review. Part-time retirees are not included when calculating the expectancy.

The expected effective retirement age can be calculated for persons at any age. The expectancy for a 25-year-old has been selected as the basic indicator.

**Figure 1.2.2.**

*Expected effective retirement age for 60 and 62-year-olds in 2005–2014, all retirees on earnings-related pension.*



The figure shows the expected development of two age groups on the brink of retirement age. The development of the expectancy for 60-year-olds has risen by over a year during the last nine years. The great peak in 2010 can be explained by the fact that the unemployment pension was abolished then.

The expected effective retirement age of 62-year-olds has remained fairly stable throughout the time period. It decreased in 2005, when the lower limit for flexible old-age retirement age became 63 years of age. Since then it has climbed back up to approximately 64 years.

The expected effective retirement ages of 60-year-olds and 62-year-olds are closer to each other than before. In recent years, the gap has narrowed clearly as an increasingly fewer number of people retire at age 60 or 61.

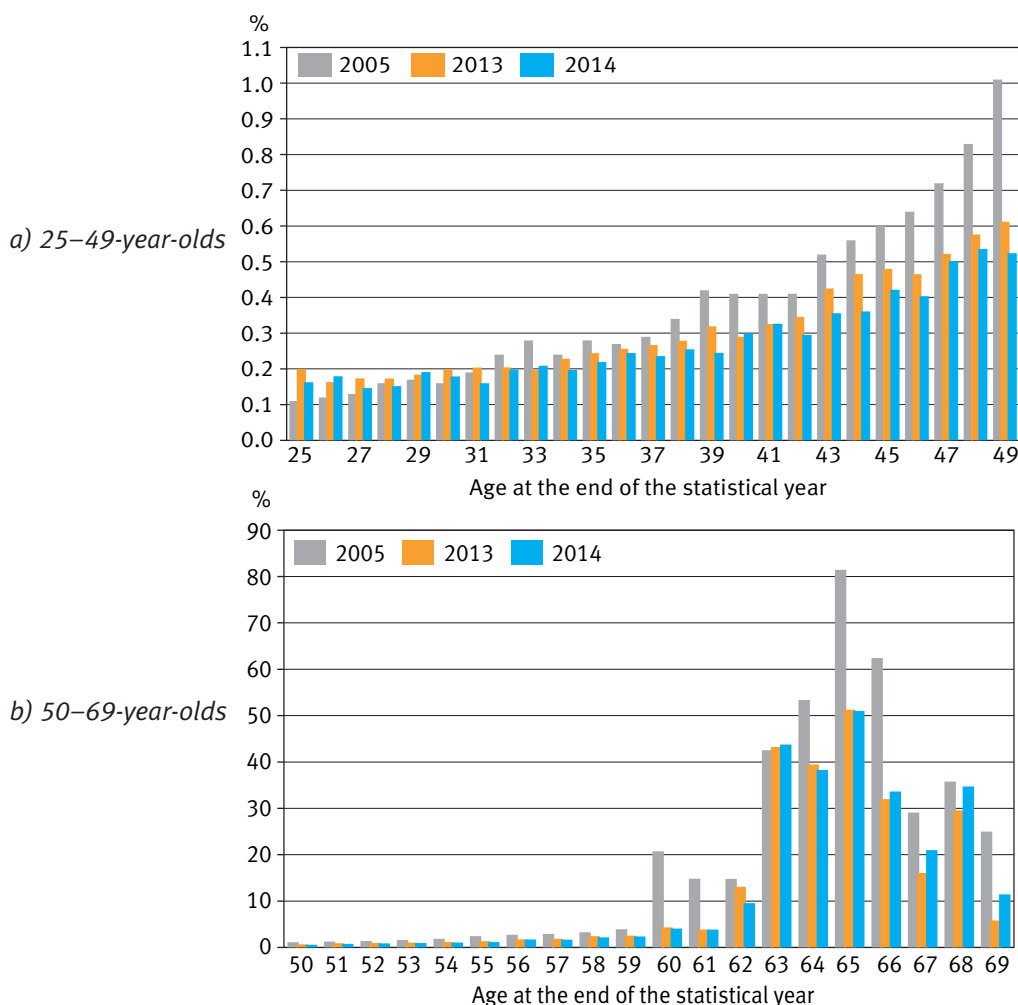
Additional information: [Expected effective retirement age in the Finnish earnings-related pension system. Finnish Centre for Pensions, Statistical Reports 03/2015.](#)

### 1.2.3 Share of insured that have retired on an earnings-related pension

The share of insured that have retired on an earnings-related pension depicts the percentage share of new retirees among persons of the same age who are insured but not retired. The ratio can be interpreted as the risk of retirement at a certain age. This retirement risk is also used to calculate expected retirement age.

**Figure 1.2.3.**

Share of insured that have retired on an earnings-related pension, 2005, 2013 and 2014.



Please note the different scaling in figures a and b.

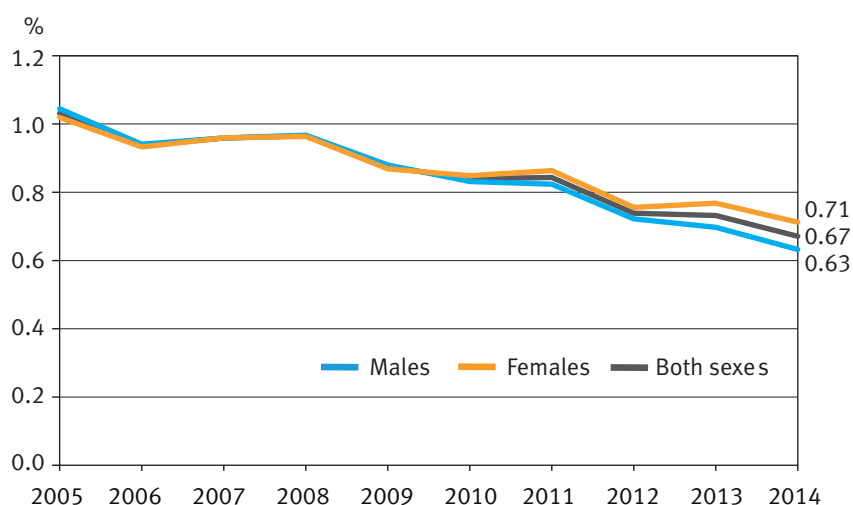
After 2005, the share of new retirees on an earnings-related pension has clearly dropped in the age groups of those under 63. The exception is those under the age of 30, where no decline is noticeable. After 2005, a new group of people with short working lives, mostly young, have come under the right to earnings-related pension. Previously they were left entirely outside the earnings-related pension scheme, and in reality their pension security is still based on national pension security, in addition to which they now receive a small earnings-related pension. The decrease in options for early retirement, especially the termination of the unemployment pension, can be seen clearly where the older working population is concerned. This is especially true in the age cohorts of 60 and 61-year-olds, for whom retirement used to be much more common than it is now.

### 1.2.4 Age-standardized incidence of disability pensions

The incidence of disability pensions depicts the percentage share of the non-retired population that has begun receiving disability pension during the year in question. The figures have been age-standardized, using those insured for earnings-related pension in the last year as standard population. By standardizing them, the impact that age structure differences in the population have on the incidence is removed.

**Figure 1.2.4**

*Age-standardized incidence of disability pensions for 25–62-year-olds in the earnings-related pension scheme in 2005–2014 by gender, %.*



The incidence of disability pensions have decreased about by 0.4 percentage points over the entire time period, and more for men than for women. Since 2010, starting pensions for females has been slightly greater than for males.

The incidences have remained virtually the same in number for those under 45, meaning that the decrease has happened in older age cohorts. In 2014, 20 per cent of all new retirees on a disability pension were younger than 45. Over half were aged between 55–62.

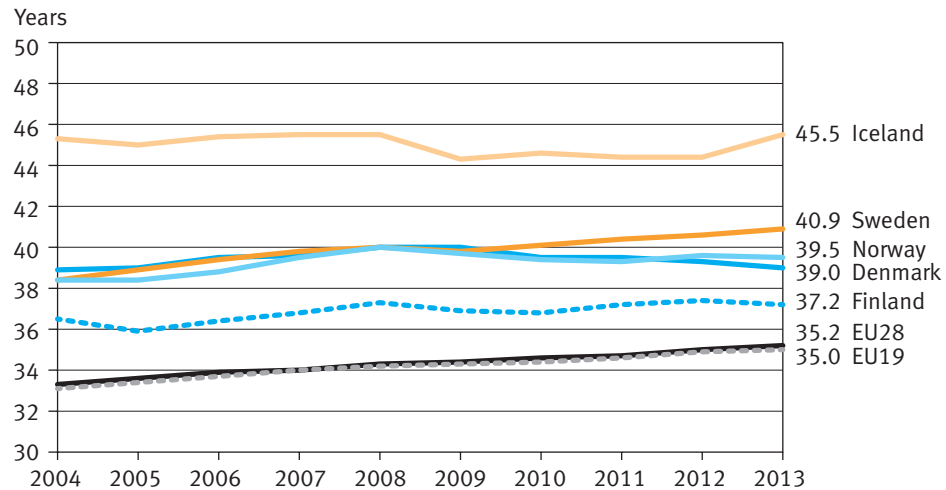
In 2014, a total of 18,800 persons insured for earnings-related pension retired on a disability pension. The most common reasons for retirement on a disability pension are musculoskeletal disorders and mental and behavioural disorders. Those retiring based on musculoskeletal diseases accounted for 36 per cent, and those retiring for reasons of mental health for 28 per cent.

### 1.2.5 Duration of active working life in the Nordic countries and the EU

The duration of active working life depicts the average number of years a 15-year-old is expected to take part in the workforce during the remaining years of life. The figures come from Eurostat: <http://appsso.eurostat.ec.europa.eu/nui/show.do>.

**Figure 1.2.5.**

*Duration of active working life of a 15-year-old in the Nordic countries and the EU in 2004–2013.*



The duration of active working life has increased throughout the European Union. With the exception of Iceland, the duration in the Nordics has grown or remained the same.

In Finland, the active working life duration is shorter than in the other Nordic countries. The difference to Sweden was 3.7 years in 2013.

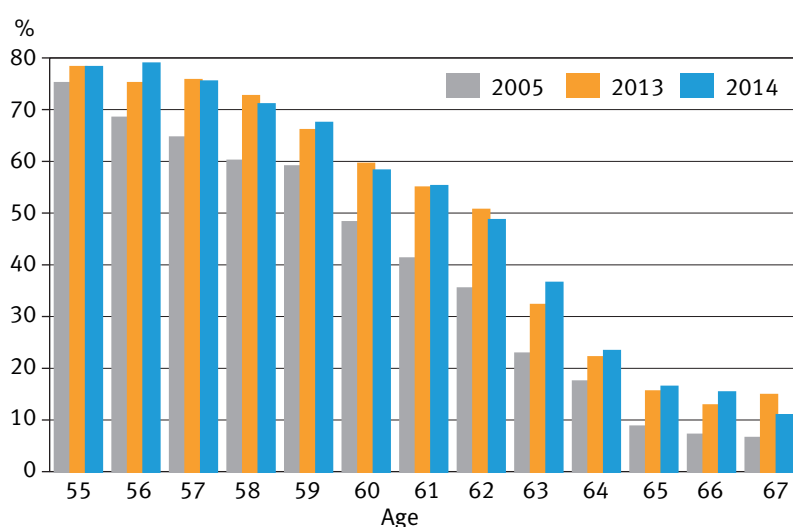
### 1.2.6 Employment rate of 55–67-year-olds

The *employment rate* is the percentage share of employed persons in the population of the same age. The review is based on the annual averages of the labour force survey by Statistics Finland

As employed is considered a person who, during the week of research, was in gainful employment and receiving monetary salary for at least an hour, or fringe benefits for work, or profit if self-employed, or someone who has been temporarily off work. More detailed definitions are available from Statistics Finland: [http://stat.fi/til/tyti/index\\_en.html](http://stat.fi/til/tyti/index_en.html).

**Figure 1.2.6.**

*The employment rate of 55–67-year-olds, 2005, 2013 and 2014.*



In the last few years, the employment rate has risen among the older workforce. In ten years the employment rate has risen clearly in all age cohorts of 55 and over. Although the employment rate of the 65–67-year-olds is still on a relatively low level, it has nearly doubled since 2005.

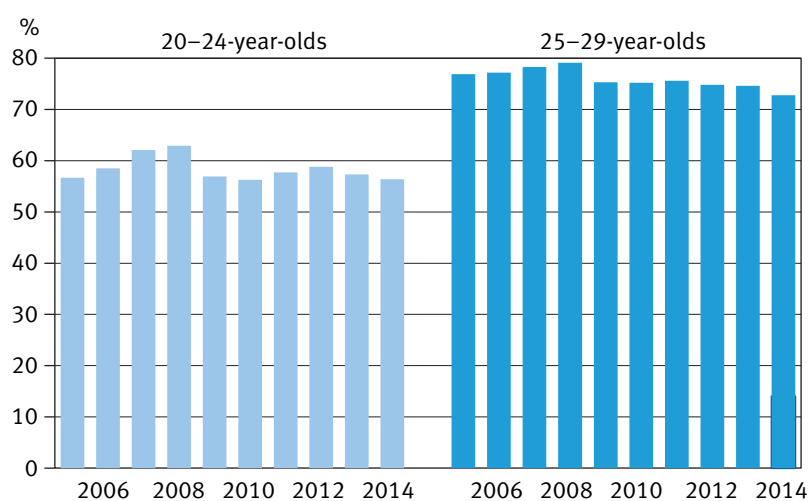
### 1.2.7 Employment rate of 20–29-year-olds

The *employment rate* is the percentage share of employed persons in the population of the same age. The review is based on the annual averages of the labour force survey by Statistics Finland

As employed is considered a person who, during the week of research, was in gainful employment and receiving monetary salary for at least an hour, or fringe benefits for work, or profit if self-employed, or someone who has been temporarily off work. More detailed definitions are available from Statistics Finland: [http://stat.fi/til/tyti/index\\_en.html](http://stat.fi/til/tyti/index_en.html).

**Figure 1.2.7.**

*The employment rate of 20–29-year-olds in 2005–2014.*



The employment rate of young people dropped in the early 2000s. From 2004 onwards, the employment rate of young people began rising steadily. The financial crisis of 2008 was reflected particularly in the employment rate of the young in 2009. The employment rate of young people declined further in 2014. The employment rate in 2014 among 20–24-year-olds was 56.4 per cent and among 25–29-year-olds 72.8 per cent.

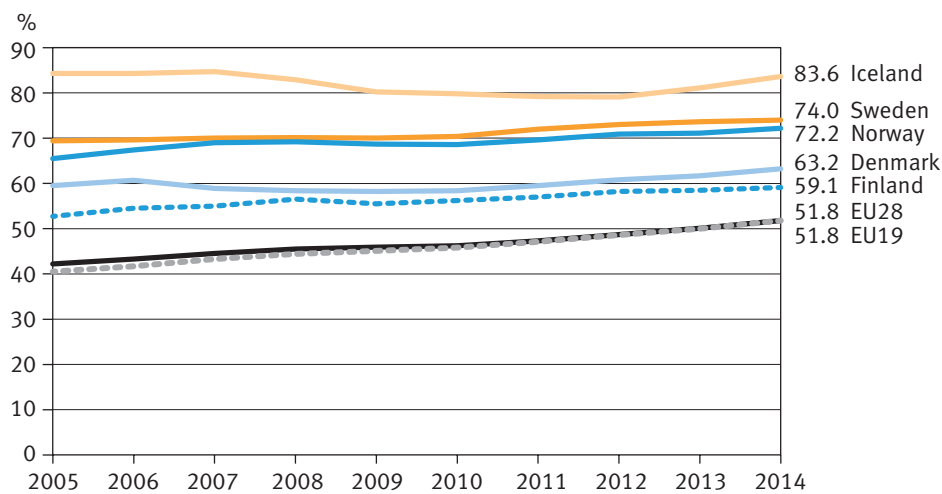
### 1.2.8 Employment rate of 55–64-year-olds in the Nordic countries and the EU

The employment rate is the percentage share of employed persons in the population of the same age. The review is based on data collected by Eurostat from the workforce research of different countries. The definitions of the statistic are the same as in the workforce research of Statistics Finland. For more details, please visit Eurostat at [http://ec.europa.eu/eurostat/cache/metadata/FR/tsdde100\\_esmsip.htm](http://ec.europa.eu/eurostat/cache/metadata/FR/tsdde100_esmsip.htm).

As employed is considered a person who, during the week of research, was in gainful employment and receiving monetary salary for at least an hour, or fringe benefits for work, or profit if self-employed, or someone who has been temporarily off work.

**Figure 1.2.8.**

*The employment rate of 55–64-year-olds in the Nordic countries and the EU in 2005–2014.*



In the EU, the employment rate of 55–64-year-olds has increased in the 2000s. This is the case also in the Nordic countries, with the exception of Iceland, where, during the entire research period, the employment rate has clearly been the highest among the Nordic countries, at roughly 80 per cent. The most rapid rise in the Nordic countries was seen in Finland, particularly before the financial crisis, as of which time the employment rates for Finland's and Denmark's 55–64-year-olds have been largely at the same level. In recent years, the development of employment in Finland has been weak, and the gap between it and the other Nordic countries is widening. Denmark is beginning to break away, and ahead of it, Sweden's and Norway's employment rates are already considerably more than ten percentage points higher than Finland's.

In Finland, the employment rate of the workforce aged 55–64 has thus been clearly lower than in the other Nordic countries. At the same time, however, it has been clearly above the EU average. The employment trend of recent years in Finland has been weak, and Finland has neared the EU average. In 2014, the rise in employment in the EU and euro-zone countries was three times as high as the rise in employment in Finland, and the year before that, the situation was no better.

At least some of the differences between the Nordic countries can be explained by part-time work. A lot more part-time work is carried out in Sweden and Norway than in Finland.





## **2 Level of pensions**

### **2.1 Core indicators**

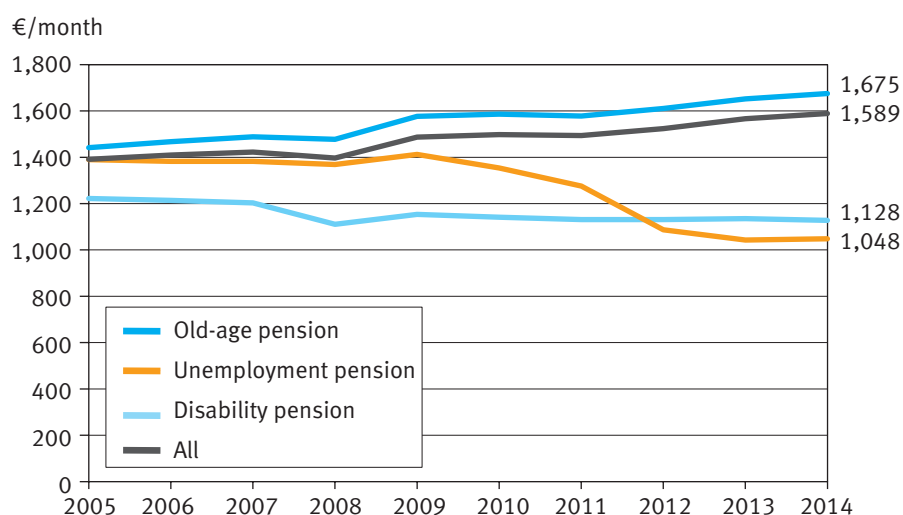
- 2.1.1 Average total pension in one's own right
- 2.1.2 Average total pension in one's own right in relation to average earnings
- 2.1.3 Average total pension in relation to average earnings in 2014–2080
- 2.1.4 Pension replacement rate
- 2.1.5 Calculation of the development of theoretical pension replacement rates

### 2.1.1 Average total pension in one's own right

The average total pension in one's own right depicts the average total pension of persons resident in Finland and receiving old-age, disability or unemployment pension from the earnings-related and/or national pension scheme. The pension contains the individual's own earnings-related and national pension as well as surviving spouse's pension. The total pension also comprises workers' compensation insurance, traffic insurance, military accident insurance and pensions according to the Military Injuries Act as well as front-veterans' supplement, child increase and guarantee pensions paid by Kela (the Social Insurance Institution).

**Figure 2.1.1.**

The average total pension in one's own right by pension benefit in 2005–2014, in 2014 currency.



Since 2008, national pension no longer contains pensioners' housing and care allowances.

The average total pension of old-age pension recipients has seen a real growth of 16 per cent during the time period.

The total pension of disability pension recipients remained virtually the same until 2007. That was the year when the last individual pensions taken early ended. The level of these pensions was better than the actual disability pensions. The decrease in the level of disability pensions can partly be explained by the growth in the number of partial disability pensions.

Changes in the structure of pension recipients have affected the average level of total pension for recipients of disability pension. Since 2010, no new age cohorts have been covered by the pension right. The number of people who received an unemployment pension from the earnings-related pension system declined, which has reduced the amount of the average unemployment pension. At the end of 2014, the number of unemployment pension recipients was down to 400.

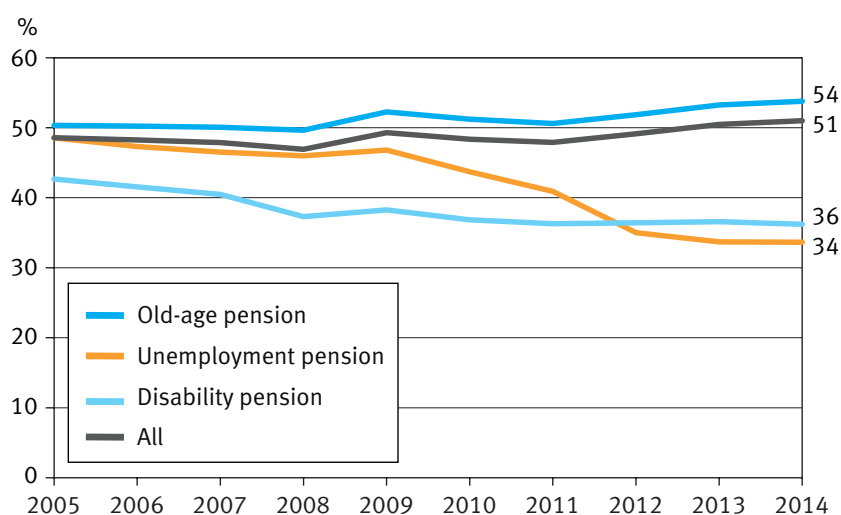
### 2.1.2 Average total pension in one's own right in relation to average earnings

The average total pension in one's own right depicts the average total pension of persons resident in Finland and receiving old-age, disability or unemployment pension from the earnings-related and/or national pension scheme. The pension comprises the individual's own earnings-related and national pension as well as surviving spouse's pension. The total pension also comprises workers' compensation insurance, traffic insurance, military accident insurance and pensions according to the Military Injuries Act as well as front-veterans' supplement, child increase and guarantee pensions paid by Kela (the Social Insurance Institution).

The average earnings are based on the average wages and self-employment income of different professions, as reported in the income distribution statistic of Statistics Finland. More detailed definitions are available from Statistics Finland: [http://www.stat.fi/til/tjt/index\\_en.html](http://www.stat.fi/til/tjt/index_en.html).

**Figure 2.1.2.**

*The average total pension in one's own right in 2005–2014, in percentage of the annual average earnings of the year in question by pension benefit.*



Since 2008, national pension no longer contains pensioners' housing and care allowances.

The income ratio of all pension recipients and the working population has remained around 50 per cent throughout the entire period under review. There was a slight decline in the latter half of the 2000s, but towards the end the level once again rose to what it had been at the start of the review period. The income ratio has remained virtually the same due to the development in old-age pensions. The average old-age pension in relation to the average income of the working population has remained around 50 per cent, and even exceeded it in the last few years. Moderate changes in average earnings have also affected the development of the income ratio in recent years.

The status of disability and unemployment pension recipients in relation to the working population has weakened during the period under review. The income ratio of disability pension recipients to the working population dropped from 43 to 36 per cent, and that of unemployment pension recipients from 49 to 34 per cent.

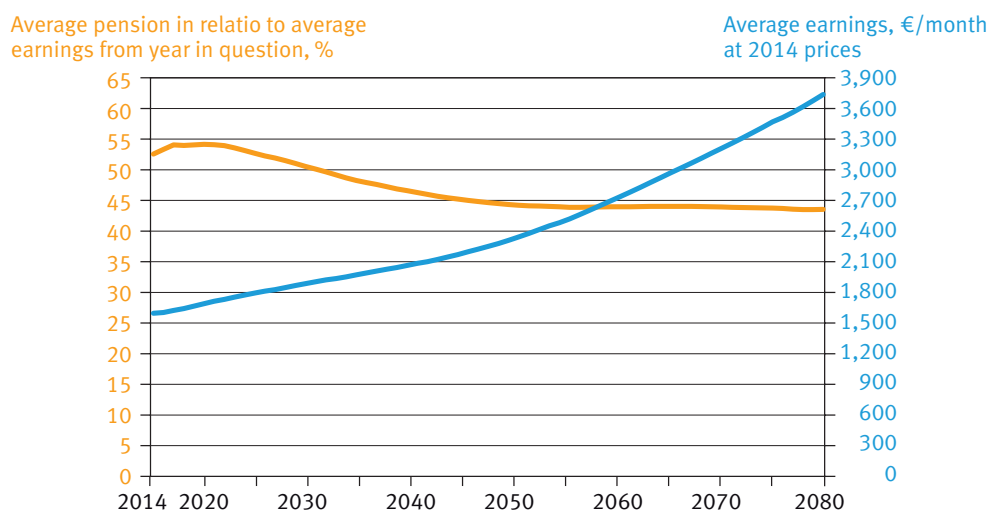
### 2.1.3 Average total pension in relation to average earnings, 2012–2080

The estimated development of the average total pension in one's own right from 2014 to 2080 is based on the Finnish Centre for Pensions' estimates of the impacts of the 2017 pension reform (*Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista. Eläketurvakeskuksen raportteja 02/2015*).

The average total pension in one's own right depicts the average total pension of persons resident in Finland and receiving old-age, disability or unemployment pension from the earnings-related and/or national pension scheme. The pension contains the individual's own earnings-related and national pension as well as surviving spouse's pension. The total pension also comprises workers' compensation insurance, traffic insurance, military accident insurance and pensions according to the Military Injuries Act, as well as front-veterans' supplement, child increase and guarantee pensions paid by Kela (the Social Insurance Institution).

**Figure 2.1.3.**

*The average total pension in one's own right in 2012 currency and percentage rates from the average earnings of each year in 2014–2080.*



During the projection period, the purchasing power of the average pension will more than double. In other words, at the 2014 price level, the pension will rise from roughly EUR 1,569 to more than EUR 3,700 per month. The growth in pension purchasing power is mainly the result of an increase in the general earnings level.

In 2014, the average pension was slightly more than half the average earnings of the insured. The ratio of earnings-related pensions to the earnings level is still growing somewhat, due to slow growth in average earnings and the earnings-related pension scheme maturing. From the 2020s onwards, the growth in pension levels will, however, lag behind the growth in earnings level. This is mainly due to the life expectancy coefficient. Also, the discontinuation of higher accruals in the public sector than in the private one, which took place in the 1990s, and the increase in employee contribution share decrease the ratio of pensions to the earnings level. The pensions paid by Kela are tied to the index with 50 per cent weight on wage growth and 50 per cent consumer price inflation. For this reason, the pensions of Kela grow more slowly than the earnings level.

### 2.1.4 Pension replacement rate

In this instance, the *pension replacement rate* is defined as depicting the earnings-related pension percentage share of the earnings level preceding retirement, of a person retired on an earnings-related pension. The earnings-related pension includes all pensions in one's own right paid as earnings-related pensions. The earnings level has been determined two and three years before the pension contingency year, based on earnings received.

Included in the review are persons who retired on an earnings-related pension in 2014 and had earnings from work during the years 2011 and 2012. Excluded from the review are thus those new retirees who did not have earnings during the two calendar years under review. Part-time pension recipients have also been excluded from the review during that time. The limitations screened out approximately half of all new retirees. Many left outside the review retired as a result of disability or unemployment.

The earnings have been indexed to the statistical year by the cost-of-living index.

**Table 2.1.4.**

*The pension replacement rates of those retiring from work in 2014.*

	Replacement rate					
	Average	Lowest decile i.e. 10%	The lower quartile i.e. 25%	Median i.e. 50%	The upper quartile i.e. 75%	Highest decile i.e. 90%
<b>All new retirees</b>						
Both sexes	66	32	48	59	68	82
Men	72	39	52	61	71	88
Women	61	29	45	57	66	77
<b>Wage earners</b>						
Both sexes	64	31	48	59	67	77
Men	70	37	52	60	68	79
Women	59	28	44	57	66	75

The pension replacement rate for people retiring in 2014 who were part of the research was 66 per cent on average. The replacement rate varies greatly. The median was 59 per cent. Every second replacement rate was between 48–68 per cent. The replacement rate was slightly higher for males than for females.

The replacement rate for wage earners was 63 slightly lower than that of the self-employed. The divergence was also smaller than for the self-employed. In 2014, the replacement rate of the wage earners was 64 per cent on average, and the median was 59 per cent.

The basic figures of the presented replacement rates are, by nature, quite stable. They have not changed much in recent years.

### 2.1.5 Calculation of the development of theoretical pension replacement rates

By *theoretical pension replacement rate* is meant the amount of the starting pension in relation to the last earned wage calculated with the help of pension models. With the help of these models, it can be seen how the rules determining the level of pension affect the level of the starting pension.

The replacement rate has been calculated based on the assumption that the working life has begun at the age of 25 and continued without interruption until retirement. In the calculation, earnings are assumed to have developed according to an undulating earnings profile, where the earnings are 75 per cent of average earnings at the start of the working life and 105 per cent at the end. The same earnings profile has been used in the EU when calculating the theoretical replacement rate indicator.

The projections used in the calculation are based on the Finnish Centre for Pensions' estimates of the impacts of the 2017 pension reform (*Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista. Eläketurvakeskuksen raportteja 02/2015*).

Below we describe the theoretical replacement rates of three different cohorts born in 1952, 1962 and 1987. The calculation provides a replacement rate for the same cohort according to retirement age. The working life is expected to be equally long for the different cohorts.

**Table 2.1.5.**

*Theoretical pension replacement rates for persons born in 1952, 1962 and 1987.*

Retirement age	Replacement rate		
	Born in 1952 2015 ->	Born in 1962 2025 ->	Born in 1987 2050 ->
63	50.4		
64	54.2		
65	58.1	49.3	
66	62.1	52.9	
67	66.3	56.7	49.4
68	70.5	60.6	51.1

The lowest retirement age for those born in 1962 is 65, and for those born in 1987, 67 years and 6 months.

Theoretical pension replacement rates are lowered as we go from the oldest cohort to the youngest. According to the population forecast, life expectancy will be extended, meaning that the life expectancy coefficient will lower the pension level and replacement rate. Working longer improves the replacement rates in each cohort.

## **2 Level of pensions**

### **2.2 Complementing indicators**

- 2.2.1 Average total pension in one's own right and share of pension income per decile
- 2.2.2 Pension replacement rate distribution
- 2.2.3 Income of pensioner households
- 2.2.4 The low income of pensioners

### 2.2.1 Average total pension in one's own right and share of pension income per decile

*The average total pension in one's own right per decile* depicts the total pension of pension recipients in different deciles.

*The share of pension recipient deciles in the pension income* depicts the pension income share of pension recipients in different deciles.

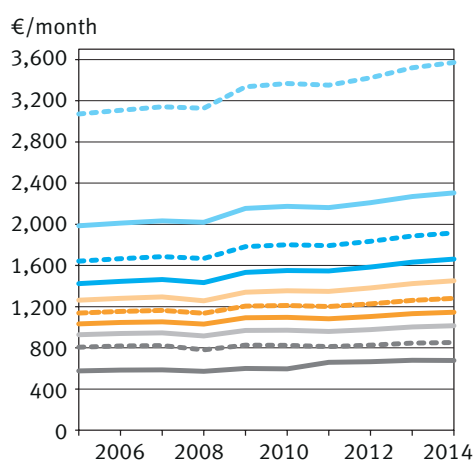
The deciles have been arrived at by arranging pension recipients in ascending order based on total pension, and by dividing pension recipients into ten groups of equal size.

Recipients of pension in one's own right are those Finnish residents receiving old-age, disability, unemployment or special farmers' pensions from the earnings-related and/or national pension scheme.

The total pension comprises the individual's own earnings-related and national pension as well as surviving spouse's pension. The total pension also comprises workers' compensation insurance, traffic insurance, military accident insurance and pensions according to the Military Injuries Act as well as front-veterans' supplement, child increase and guarantee pensions paid by Kela (the Social Insurance Institution).

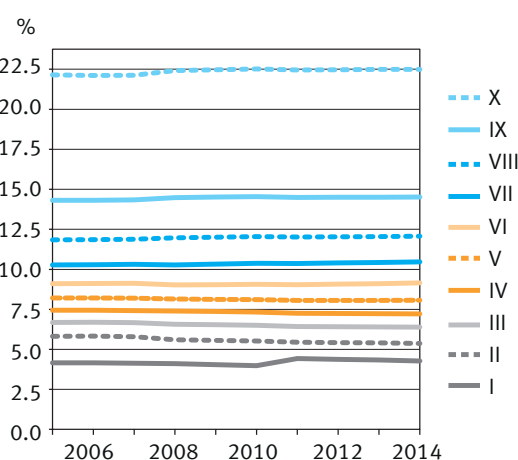
**Figure 2.2.1a.**

*The average total pension of pension deciles of recipients of pension in one's own right in 2005–2014, in 2014 currency.*



**Figure 2.2.1b.**

*Share of deciles of recipients of pension in one's own right in the pension income in 2005–2014, %.*



The pension level has risen in all pension income categories during the period under review. However, the pension level has risen more in the higher than in the lower deciles, resulting in greater differences between pensions when it comes to actual euro amounts. In the uppermost decile, the average pension has risen by approximately EUR 500, and in the lowest by approximately EUR 100.

The income share of the lowest decile is less than five per cent, while it is over 20 per cent in the uppermost decile. The three lowest deciles, in other words 30 per cent of pension recipients, receive approximately 15 per cent of the pension income, while the share of the three highest deciles is half.

The distribution of pension income has remained very stable during the period under review.



### 2.2.2 Pension replacement rate distribution

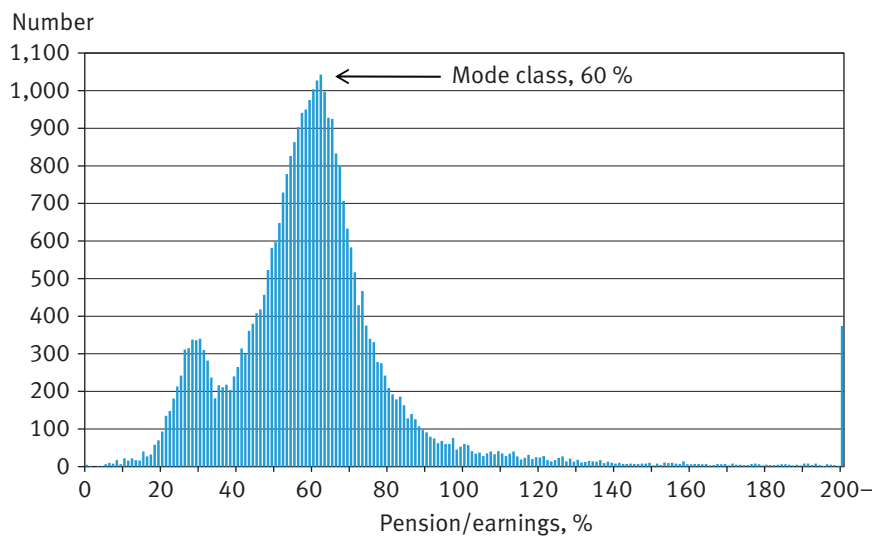
The pension replacement rate here depicts the earnings-related pension percentage share of the earnings level preceding retirement, of a person retired on an earnings-related pension. The earnings-related pension includes all pensions in one's own right paid as earnings-related pensions. The earnings level has been determined two and three years before the pension contingency year, based on earnings received.

Included in the review are persons who retired on an earnings-related pension in 2014 and had earnings from work during the years 2011 and 2012. Excluded from the review are thus those new retirees who did not have earnings during the two calendar years under review. Part-time pension recipients have also been excluded from the review during that time. The limitations screened out approximately half of all new retirees. Many left outside the review retired as a result of disability or unemployment. The definition is the same as in section 2.1.4

The earnings have been indexed to the statistical year by the cost-of-living index.

**Figure 2.2.2.**

*The ratio of pension to preceding earnings of those retiring on an earnings-related pension in 2014.*



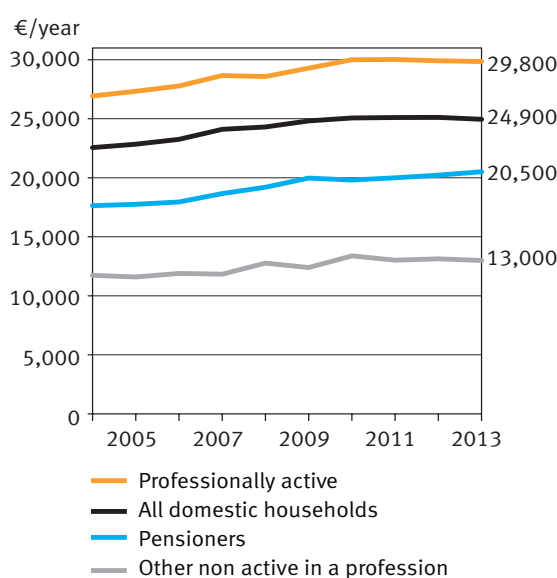
The ratio of pension to preceding earnings varies a lot for the newly retired. In some situations, the replacement rate can rise very high percentage-wise. In such cases it is usually not a question of large pensions, but of small and irregular earnings during the final years of working life. The replacement rate distribution of earnings-related pension clearly has two peaks. The smaller peak comes at the 30 per cent mark and the higher peak at the 60 per cent mark. The concentration at the 30 per cent mark can be explained by the partial disability pensions. The partial disability pension is half the amount of a full pension.

### 2.2.3 Income of pensioner households

A household consists of persons living and dining together. The member of the household that earns the most determines the socio-economic status of the household. The categories are professionally active, pensioners and others. By income is meant the household's disposable money income per consumption unit. This is referred to as equivalent income. Starting from the statistical year 2011, Statistics Finland has calculated the equivalent income based on money income, following the practices of Eurostat. Previous years have been updated to correspond to this concept. According to the previous definition, equivalent income also included imputed income items such as housing income. Pensioners, more often than the rest of the population, live in homes that they own and have fully paid for, which weakens the position of pensioners in the new calculation method. More detailed definitions are available from Statistics Finland: [http://tilastokeskus.fi/til/tjt/index\\_en.html](http://tilastokeskus.fi/til/tjt/index_en.html).

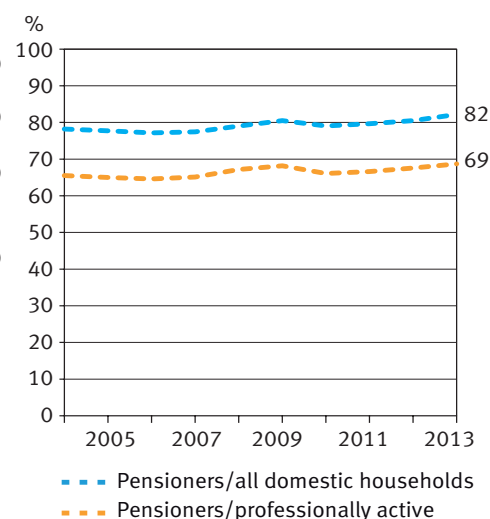
**Figure 2.2.3a.**

*Domestic household income in 2004–2013, the average, in 2013 currency.*



**Figure 2.2.3b.**

*Income of pensioner households in relation to wage earners and all domestic households in 2004–2013.*



In 2013, the average income of those living in pensioner households, measured as equivalent income, was EUR 20,500 per year, i.e. roughly EUR 1,700 per month. Those who fared best were professionally active households, where the real income was EUR 29,800. In a weaker position, with annual incomes of EUR 13,000 on average, were persons living in other domestic households: in practice students and the long-term unemployed.

Compared to 2004, real growth in the income of pensioner households was 16 per cent. In relation to those who are professionally active, the income of pensioner households has ranged between 65–69 per cent. Economic fluctuations are reflected in this ratio. During periods of uptrends, the position of pensioner households compared to the professionally active will usually weaken, and correspondingly improve during periods of decline. Compared to the population as a whole, the income of pensioner households has varied between 77–82 per cent. In 2013, the ratio was 82 per cent.

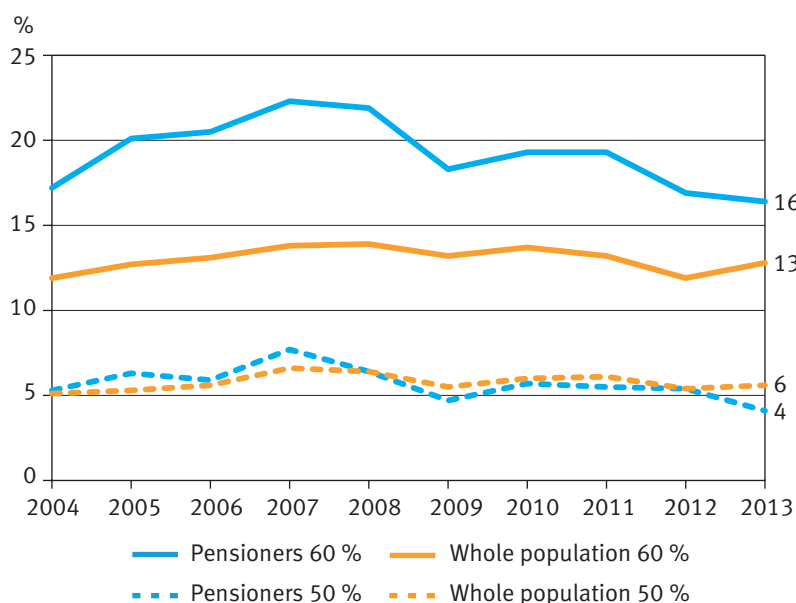
### 2.2.4 The low income of pensioners

The *low income rate* depicts the share of the population falling below the low income limit. The low income limit is based on the household's disposable money income per consumption unit. The EU countries follow a uniform definition according to which a person is considered to be a low income earner if the income is smaller than 60 per cent of the median income, but a 50 per cent limit is also used.

Starting from the statistical year 2011, Statistics Finland has calculated the equivalent income based on financial income, following the practices of Eurostat. Previous years have been updated to correspond to this concept. According to the previous definition, equivalent income also included imputed income items such as housing income. It is more common for pensioners to own and have fully paid for their homes, which is why the omission of housing income from the income particularly raises the low income rate of pensioners. More detailed definitions are available from Statistics Finland: [http://tilastokeskus.fi/til/tjt/index\\_en.html](http://tilastokeskus.fi/til/tjt/index_en.html).

**Figure 2.2.4.**

*The low income rate of pensioners and the entire population at the low income limit of 60 and 50 per cent in 2004–2013.*



In 2013 the pensioner low income rate was 16.4 per cent when calculated based on the 60 per cent limit, which is just under 4 percentage points higher than for the population as a whole. Compared to 2004, the low income rate of pensioners has slightly declined, whereas for the entire population it has slightly increased. The occasional shift in pensioner low income rate is also greater than for the population as a whole. The fluctuation is affected by changes to the poverty limit, since the income distribution of pensioners is concentrated more around the 60 per cent poverty limit than other population groups. Changes to the low income limit thus affect the number of low income pensioners the most, and thereby the pensioner low income rate. Using the lower limit of 50 per cent, pensioner low income rate is practically the same as for the population as a whole.



## **3 Pension expenditure and financing**

### **3.1 Core indicators**

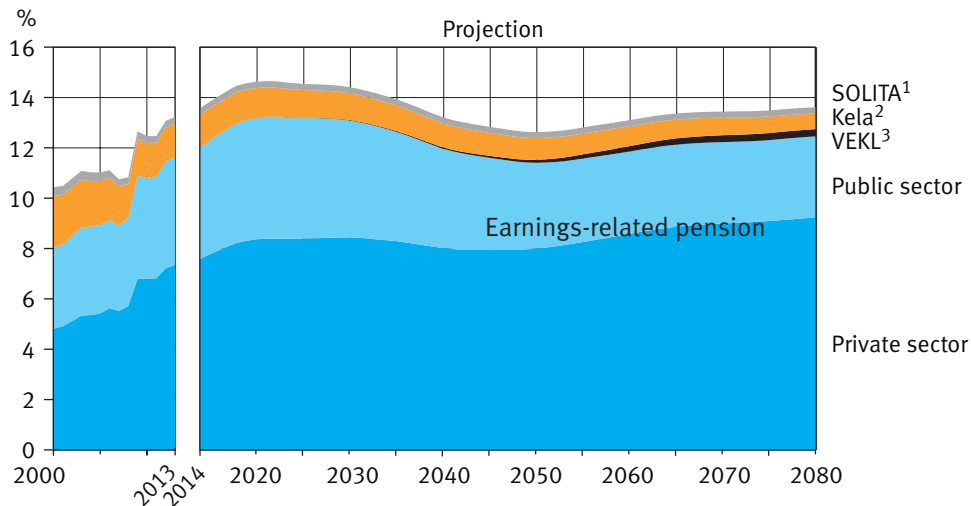
- 3.1.1 Statutory pension expenditure in relation to the gross domestic product
- 3.1.2 Earnings-related pension expenditure in relation to the sum of earnings
- 3.1.3 Expenditure and contribution rates under the Employees Pensions Act
- 3.1.4 Accrued pension rights and the funding ratio

### 3.1.1 Statutory pension expenditure in relation to the gross domestic product

The estimate is based on the Finnish Centre for Pensions' estimates of the impacts of the 2017 pension reform (*Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista. Eläketurvakeskuksen raportteja 02/2015*).

**Figure 3.1.1.**

*Statutory pension expenditure in relation to the gross domestic product in 2000–2080, %.*



<sup>1</sup>Acts on military accidents, military injuries, traffic accident and workers' compensation.

<sup>2</sup>Comprises national pensions and guarantee pensions.

<sup>3</sup>The act on pension state funds replacing pensions during periods of care for child younger than 3 years or during studies.

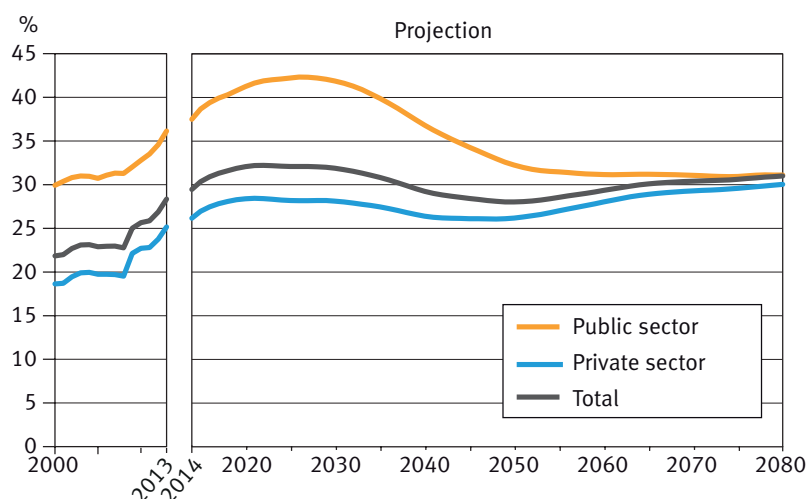
Prior to the recession that began in the autumn of 2008, the statutory pension expenditure was approximately 11 per cent of GDP. The GDP dropped in 2009 but pension expenditure increased, meaning that the ratio of pension expenditure to GDP grew strongly. The relative amount of expenditure is expected to grow until the early 2020s, at which time pension expenditure will account for just under 15 per cent of GDP. In the next few years, the growth in expenditure will largely be due to the rise in average pension in relation to average earnings. Thereafter, over the next 30 years, the ratio of pension expenditure to GDP will decline to some 13 per cent. This will primarily be due to delayed retirement and a reduction in average pension in relation to average earnings. In the latter half of the century, the rate of delayed retirement will slow down and the growing share of the pensioner population will cause a slight growth in pension expenditure in relation to GDP.

### 3.1.2 Earnings-related pension expenditure in relation to the sum of earnings

Estimate of the development of earnings-related pension expenditure in relation to the financial bases, in other words the sums of earnings per economic sector based on the Finnish Centre for Pensions' estimates of the impacts of the 2017 pension reform (*Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista. Eläketurvakeskuksen raportteja 02/2015*).

**Figure 3.1.2.**

*Earnings-related pension expenditure in relation to the sum of earnings in 2000–2080, %.*



The development of pension expenditure in relation to income from work is different in the public and private sectors. In the private sector, the expenditure ratio will rise by approximately 2 percentage points to just under 30 per cent by 2020. Thereafter, the expenditure ratio of the private sector will revert to 26 per cent mid-century, after which it will begin to grow slightly. In 2014, the earnings-related pension expenditure of the public sector was roughly 37 per cent in relation to the wage sum of the public sector, and the expenditure will rise by almost 5 percentage points by 2030. After that, the expenditure ratio will slowly return to a level of roughly 30 per cent.

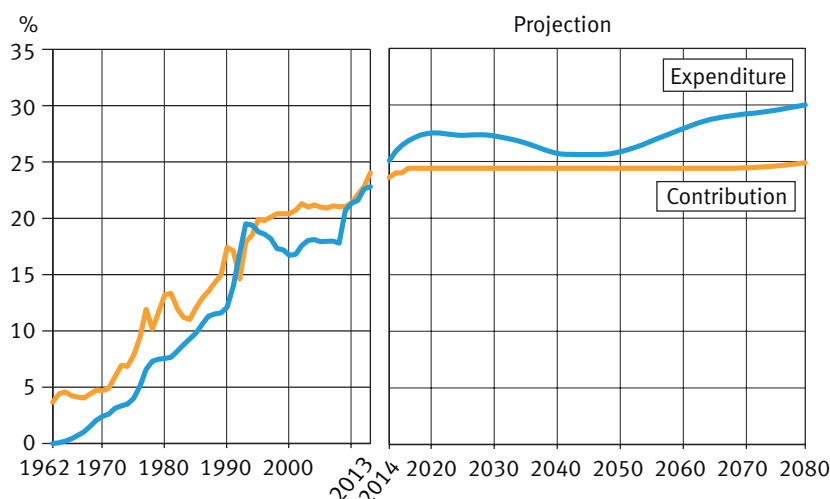
The expenditure ratio of the public sector, that has remained high for years, is the result of two factors. Historically the pension benefits were more generous in the public sector than in the private sector. Furthermore privatizations have resulted in employees transferring to the private sector. In the long term, expenditure ratios between the public and private sectors will converge close to each other, since the current benefit rules are almost identical. The total amount of earnings-related pension expenditure includes the pension expenditure accrued from periods of study and caring for a child at home (VEKL). This pension expenditure does not, however, include sector-specific expenditure. For this reason, the expenditure ratio of all earnings-related pensions is as great as the expenditure ratio of the public sector at the end of the projection period.

### 3.1.3 Expenditure and contribution rates under the Employees Pensions Act

The realised and projected development of pension expenditure and contributions in the private sector in relation to the corresponding wage sum is based on the Finnish Centre for Pensions' estimates of the impacts of the 2017 pension reform (*Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista. Eläketurvakeskuksen raportteja 02/2015*).

**Figure 3.1.3.**

*Expenditure and contribution rates under the Employees Pensions Act in 1962–2080.*



Since the introduction of the Employees' Pensions Act (TEL), the growth in pension expenditure for private sector employees has almost continuously outpaced the growth in the payroll due to the gradual commencement of benefits and the aging of the population. This development path will change course over the next few years, and in 2020–2050 the ratio of pension expenditure to payroll will decline by just under two percentage points. The change will be due to delayed retirement and a reduction in average pension in relation to average earnings. In the latter half of the century, the rate of delayed retirement will slow down and the growing share of the pensioner population will lead to growth in the ratio of pension expenditure to payroll.

The spike in the expenditure percentage in the 1990s was caused by the constricted payroll during the recession. Correspondingly, after 2009, the share of expenditure has increased rapidly under the weak economic development conditions and growing pension expenditure.

Partial funding has been used in the earnings-related pensions of wage-earners in the private sector. This is evident such that the pension contribution has exceeded the pension expenditure up until the first half of the current decade. In future, the contribution can be kept lower than the expenditure by using the return from the accrued pension funds. The estimated contribution development is not, in the long term, based on the dismantling of pension assets; rather, the pension assets at the end of the calculation period in relation to payroll are higher than they were at the beginning of the projection period.



### 3.1.4 Accrued pension rights and the funding ratio

By capital value of pensions accrued up to a certain point is meant the amount of money that would be sufficient to fund pensions accrued up to that certain point in time. This requires taking into account the return receivable on the funds (discount rate).

The estimates for 2010–2012 are based on the long-term projections of the Finnish Centre for Pensions from the years 2011 and 2013 (*Statutory pensions in Finland – long-term projections 2011*, Finnish Centre for Pensions, Reports 05/2011 and (*Statutory pensions in Finland: long-term projections 2013*, Finnish Centre for Pensions, Reports 03/2014). The estimate for 2013 is based on the Finnish Centre for Pensions' calculations, following the same principles.

**Table 3.1.4.**

*Pension funds, accrued pensions rights and the funding ratio in 2010–2013, with a real discount rate of 2.5 per cent. The money amounts are at current prices.*

	The Employees Pensions Act				All			
	2010	2011	2012	2013	2010	2011	2012	2013
Pension funds, billion €	92.2	89.7	103.7	96.4	138.5	136.3	149.7	162.2
Accrued pension rights, billion €	361.0	376.1	407.3	397.7	623.4	649.3	684.7	699.5
Funding ratio, %	25.5	23.9	25.5	24.2	22.2	21.0	21.9	23.2

By amount of earnings-related pension funds is meant the current value of the investments assets of earnings-related pension institutions by the end of each year. The annual fluctuation in investment returns strongly affects the amount of earnings-related pension funds. The growth in pension funds during 2012 and 2013 can largely be explained by good investment returns.

The value of accrued pensions has been calculated using a 2.5 per cent real discount rate. By the end of 2013, the combined value of accrued earnings-related pensions was a total of EUR 700 billion, which is approximately three and a half times the gross domestic product of 2013.

The funding ratio is the earnings-related pension funds divided by the capital value of accrued pensions. This key figure shows to what degree pensions already accrued can be financed using pension funds already accrued, and returns available from these funds in future. The funding ratio of the entire earnings-related pension scheme has been good 20 per cent, and that of the Employees Pensions Act slightly higher.



### **3 Pension expenditure and financing**

#### **3.2 Complementing indicators**

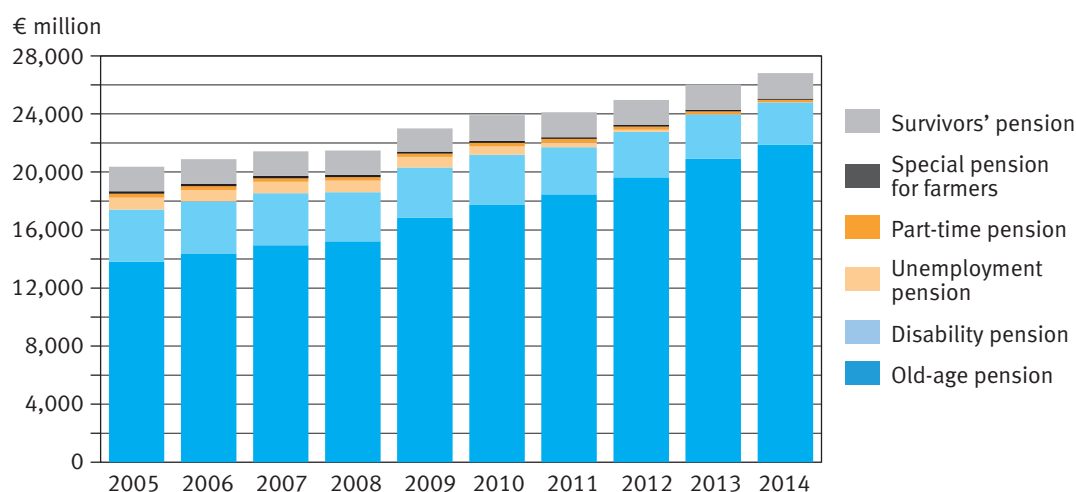
- 3.2.1 Earnings-related and national pension expenditure
- 3.2.2 Earnings-related pension contribution rates
- 3.2.3 Earnings-related pension funds in relation to the sum of earnings
- 3.2.4 Investment returns
- 3.2.5 Internal rate of return on earnings-related pension contributions by generation

### 3.2.1 Earnings-related and national pension expenditure

The earnings-related and national pension expenditure consists of statutory pensions paid by the earnings-related pension providers and Kela (the Social Insurance Institution). The pension expenditure of Kela does not include front-veteran's supplement, child increases or guarantee pensions.

**Figure 3.2.1.**

*The earnings-related and national pension expenditure according to pension type in 2005–2014, in 2014 currency.*



Since 2008, national pension no longer comprises pensioners housing and care allowances.

In 2014, earnings-related and national pensions totalled almost EUR 27 billion, of which the share of the earnings-related pensions was EUR 24.4 billion and that of the national pensions was EUR 2.4 billion. The share of old-age pensions in the overall pension expenditure was 82 per cent, that of unemployment pensions was 11 per cent and that of survivors' pensions, 7 per cent.

In 2014, Kela paid guarantee pensions at the sum of EUR 157 million, and front-veteran's supplements and child increases at a rate of EUR 36 million.

### 3.2.2 Earnings-related pension contribution rates

The table presents the average pension contribution rates during the years 2007–2015. Contribution rates according to the pension acts of wage earners contain the shares of both employers and employees. Contribution shares are calculated on the wage paid to the employee.

The employee contribution is dependent on age and is higher for those 53 years of age and above. In 2015, the contribution rate of those younger than 53 is 5.7 and 7.2 for those 53 and older. For those insured according to the Seafarer's Pensions Act, the contribution rates of employer and employee are the same, in other words 11.4 per cent for both in 2015. The pension contribution rates of the self-employed and farming entrepreneurs are dependent on their income from work. Grant recipients have been insured according to MYEL (the Farmer's Insurance Act) since 2009.

**Table 3.2.2.**

*Average earnings-related pension contribution rates in 2007–2015 according to pension act.*

Year	TyEL <sup>1</sup>	MEL	YEL	MYEL <sup>2</sup>	MYEL <sup>3</sup>	VaEL	KuEL <sup>4</sup>	KiEL
2007	21.1	22.0	19.5	10.7		24.7	28.4	31.2
2008	21.1	22.0	19.3	10.6		24.7	28.1	31.1
2009	21.3	22.0	19.6	10.8	10.3	25.0	28.2	31.5
2010	21.6	22.0	20.1	11.1	10.5	25.1	28.4	31.8
2011	22.1	22.2	20.2	11.3	10.9	24.9	28.7	31.8
2012	22.8	22.4	21.1	11.8	11.0	25.0	29.1	33.3
2013	22.8	22.6	20.9	12.9	13.4	24.9	29.6	33.7
2014	23.6	22.8	21.8	13.4	13.0	26.5	29.7	34.1
2015	24.0	22.8	22.5 <sup>5</sup>	13.6 <sup>5</sup>	13.3 <sup>5</sup>	26.4	29.8	34.3

<sup>1</sup>TyEL contribution rates take into account employer-specific customer rebates and temporary reductions to the contribution.

<sup>2</sup>Farming entrepreneurs.

<sup>3</sup>Grant recipients.

<sup>4</sup>The KuEL contribution contains contribution components based on wages and pension expenditure.

<sup>5</sup>Estimate.

TyEL The Employees Pensions Act

MEL The Seafarer's Pensions Act

YEL The Self-Employed Person's Pensions Act

MYEL The Farmers' Pension Insurance Act

VaEL The State Employees Pensions Act

KuEL The Municipal Pension Act

KiEL The Evangelical Lutheran Church Pension Act

### 3.2.3 Earnings-related pension expenditure in relation to the sum of earnings

The pension funds in the table are the technical reserves that the pension providers have reported in their balance sheets, to which the valuation gain or loss of the assets has been added. YEL and MYEL technical reserves have been used as pension funds according to these acts. Where the public sector pension providers are concerned, investment assets have been used. The sums of wages and earnings are based on the information reported by the pension providers to the Finnish Centre for Pensions.

**Table 3.2.3.**

*The earnings-related pension funds in relation to the sum of earnings in 2007–2014, %.*

Year	TyEL	MEL	YEL	MYEL	VaEL	KuEL	KiEL	Other Public	All
2007	188.1	287.9	3.9	2.0	189.8	196.6	177.1	328.3	178.3
2008	150.8	235.8	3.6	1.7	158.4	152.6	141.2	425.6	143.5
2009	177.2	283.6	3.4	1.9	182.3	179.9	167.2	474.5	167.7
2010	190.7	320.0	3.3	2.5	212.0	199.9	189.9	504.7	183.0
2011	176.6	304.2	3.0	3.0	209.3	194.6	183.5	425.0	171.6
2012	185.4	326.8	2.8	3.7	232.1	215.6	202.7	462.7	183.3
2013	197.9	335.3	2.7	4.7	247.2	231.1	222.6	507.7	195.8
2014	209.9	359.5	2.7	5.7	253.8	270.2	243.0	512.8	209.8

TyEL The Employees Pensions Act

MEL The Seafarer's Pensions Act

YEL The Self-Employed Person's Pensions Act

MYEL The Farmers' Pension Insurance Act

VaEL The State Employees Pensions Act

KuEL The Municipal Pension Act

KiEL The Evangelical Lutheran Church Pension Act

Other public: Pension rule of the Bank of Finland, pension rule of the Social Insurance Institution, pension rule of the regional government of Åland

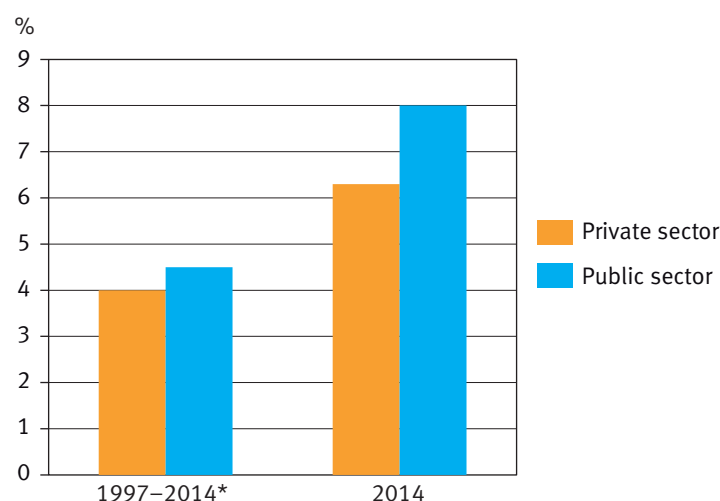
Pension funds increased until the financial crisis of 2008, when the value of the funds dropped strongly. However, the crisis turned out to be short-lived and the economy began recuperating already the following year. The amount of funds in relation to the wage sum varies a lot in the short-term review.

### 3.2.4 Investment returns

When calculating profit from earnings-related pension investments, the calculation method used is that determined by the Financial Supervisory Authority. Investment profits include the so-called cash income, in other words dividends, interest rates and rent as well as increases and decreases in value of realised and unrealised investments. The profit rate is achieved by proportioning these to the capital employed. Real profit is arrived at when the impact of consumer pricing on the purchasing power of capital employed is taken into account alongside nominal profit.

**Figure 3.2.4.**

*The average real annual profit of earnings-related pension investments in per cent of the capital employed in 1997–2014.*



\*The private sector: Average profit of pension provider investments used for the year 1997.

The public sector: Average profit of Keva investments used for the years 1997–1999.

Profits vary from year to year, first and foremost due to changes in value. The year 2014 was a good investment year. Private-sector investments produced a real profit of 6.3 per cent, and those of the public sector, 8.0 per cent. The investment operations of earnings-related pension providers in the private sector carried a slightly lower risk than those of the public sector. Private-sector actors are obligated to meet statutory demands for solvency.

Due to annual shifts in investment profits, they are also depicted in terms of average value over several years. Sufficiently comprehensive, comparable profit series that cover the entire field begin in 1997. In the private sector, the real average profit of sixteen years was 4.0 per cent per year. In the public sector it was 4.5 per cent.

Source: <http://www.tela.fi>

### 3.2.5 Internal rate of return on earnings-related pension contributions by generation

The internal rate of return is the interest rate that, when used for discounting, gives equal current values for the pension contributions and benefits for each birth-year cohort. The internal rate of return can thus be interpreted as the return on earnings-related contributions by cohort.

The calculation of the internal rate of return is based on a combination of historical data and a projection. The historical data covers the years 1962–2013. In some details, where the realised development is concerned, estimates have had to be used, but these estimates have little significance on the overall picture. As of 2014, the internal rate of return is based on the Finnish Centre for Pensions' long-term projection. This projection is based on the 2017 pension reform. (*Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista. Eläketurvakeskuksen raportteja 02/2015*).

Table 3.2.5 presents the internal real rate of return on the earnings-related contributions of insured wage-earners in accordance with the Employees Pensions Act and the acts preceding it for cohorts born between 1940 and 2000. In practice, all statutory earnings-related pensions of private-sector wage-earners are included in the calculation. Only the Seafarer's Pensions Act is excluded.

**Table 3.2.5**

*Internal real rate of return on the earnings-related pension contribution of private-sector wage-earners by year of birth, %.*

	Year of birth												
	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
Internal rate of return, %	6.5	4.9	4.0	3.3	2.8	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3

The pension system's operating costs are included in the realised and projected pension contribution, and are thus a factor that reduces the internal return. Pension contributions are tax-deductible, and pension payments received by the pensioner are taxable income. Taxation is not, however, taken into account in the calculation of the internal return.

The real internal rate of return declines from 6.5 per cent for those born in 1940 to 2.3 per cent for those born in 1970. Due to limitations in the availability of data, the calculation does not include those born before 1940. The internal rate of return for those generations would be even higher than those born in 1940 or later. Older cohorts receive high returns mostly due to low historical pension contribution rates. The contribution rates have increased gradually over time, and therefore younger cohorts face lower internal rates of return. The gradual maturing of the pension system and the ageing population will drive the contributions upwards. The real internal rate of return will be stable, at 2.3 per cent, for those born in 1970 and later.

The Finnish Centre for Pensions will publish a report in the autumn of 2015 that reviews the earnings-related pension contributions and benefits of private-sector wage-earners by year of birth and gender more comprehensively than what is presented here.





## Reviews of the Finnish Centre for Pensions 2015

- 01/2015 Kokonaiseläke 2015: työeläke, kansaneläke ja verotus
- 02/2015 Onko työuraeläkkeitä muualla?
- 03/2015 Työeläkemenoenuste vuodelle 2015
- 04/2015 Työeläkeindikaattorit 2015
- 05/2015 Työeläkejärjestelmän kannalta keskeiset EU:n politiikka- ja lainsäädäntö-hankkeet ja niiden valmistelu
- 06/2015 Pension indicators 2015



**Finnish Centre for Pensions**  
ELÄKETURVAKESKUS